

Notice of Allowability**Application No.**

10/565,954

Applicant(s)

CLARKSON ET AL.

Examiner

Iqbal H. Chowdhury, Ph.D.

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/29/2007.
2. ☒ The allowed claim(s) is/are 11-16, 20, 27, 29, 40, 41, 43 and 44.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 8/28/07, 8/31/07
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application
- ☒ Interview Summary (PTO-413), Paper No./Mail Date _____
- ☒ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other _____

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DETAILED ACTION

Application Status

In response to a previous Office action, a non-final requirement (mailed on 1/30/2007), Applicants filed an amendment, transmitted by Facsimile on 8/29/2007, amending claims 1, 12, 14, 27, 40, and 41, canceling claims 1-10, 17-19, 21-26, 28, 30-39, and 42, and adding new claims 43-44 is acknowledged.

Claims 11-16, 20, 27, 29, 40-41, and 43-44 are currently pending in the instant application.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jennifer Haynes, the representative of the instant application on August 30, 2007.

Amend specification as follows:

Insert, as the first sentence of the specification, the following.

This application is a 371 US filing of PCT/US04/29575 filed on 9/10/2004, which claims benefit of US provisional application 60/503,251 filed on 9/15/2003.

Please replace the abstract with the abstract found on the attached sheet.

Amend claims as follows:

1-10 (Cancelled)

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Replace Claim "11." With "11. A modified xylanase comprising a polypeptide having an amino acid sequence as set forth in SEQ ID NO:1, comprising amino acid substitutions at positions 2, 28, 58, and +191, further comprising at least one other substituted amino acid residue at a position selected from the group consisting of: 5, 7, 10, 11, 16, 19, 22, 26, 29, 30, 34, 36, 38, 57, 61, 63, 65, 67, 92, 93, 97, 105, 108, 110, 111, 113, 132, 143, 144, 147, 149, 151, 153, 157, 160, 162, 165, 169, 180, 184, 186, 188, and 190, wherein the position of the substituted amino acid is numbered from the amino acid after the signal and pro sequence, wherein said modified xylanase has at least 90% sequence identity to SEQ ID NO:1 and has xylanase activity".

Replace Claim "12." with "12. The xylanase according to Claim 11, wherein the at least one other substitution is at residue 144".

Replace Claim "13." with "13. The xylanase according to Claim 12, wherein the substitution is H144C, or H144K".

Replace Claim "14." with "14. The xylanase according to Claim 13, wherein the xylanase has at least an additional substitution selected from the group consisting of: H22K, S65C, N92C, V108H, F93W, N97R, F180Q and S186C".

Replace Claim "15." with "15. The xylanase according to Claim 13, wherein the xylanase has the following mutations: H144C and N92K".

Replace Claim "16." with "16. The xylanase according to Claim 13, wherein the xylanase has the following mutations: F180Q, H144C and N92C".

17-19 (Cancelled)

Replace Claim "20." with "20. The xylanase according to Claim 13, wherein the xylanase has the following mutations: H22K, F180Q, H144C and N92C".

21-26 (Cancelled)

Replace Claim "27." with "27. A modified family 11 xylanase comprising an amino acid sequence, the amino acid sequence having a substituted amino acid residue at a position

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equivalent to 144 in SEQ ID NO: 1, wherein the position of the substituted amino acid is numbered from the amino acid after the signal and pro sequence, wherein said modified xylanase has at least 90% sequence identity to SEQ ID NO:1 and has xylanase activity”.

28. (Cancelled):

Replace Claim “29.” with “29. The xylanase according to Claim 27, wherein the amino acid sequence has at least one further substituted amino acid residue at a position equivalent to a position selected from the group consisting of: 2, 22, 28, 58, 65, 92, 93, 97, 105, 108, 162, 180, 186 and +191”.

30-39 (Cancelled)

Replace Claim “40.” with “40. The xylanase of claim 12, further comprising an additional substitution at a position selected from the group consisting of: 22, 65, 92, 93, 97, 105, 108, 144, 162, 180, and 186”.

Replace Claim “41.” with “41. The xylanase of claim 27, further comprising at least one substituted amino acid residue at a position equivalent to a position selected from the group consisting of: 2, 5, 7, 10, 11, 16, 19, 22, 26, 28, 29, 30, 34, 36, 38, 57, 58, 61, 63, 65, 67, 92, 93, 97, 105, 108, 110, 111, 113, 132, 143, 144, 147, 149, 151, 153, 157, 160, 162, 165, 169, 180, 184, 186, 188, 190 and +191”.

42. (Cancelled)

43. (NEW) The xylanase of claim 11, wherein the at least one other substitution is selected from the group consisting of: H144C, H144K, H22K, S65C, N92C, V108H, F93W, N97R, F180Q and S186C.

44. (NEW) The xylanase of claim 11, wherein the modified xylanase has increased thermostability or pH-stability at high pH with respect to the corresponding wild-type xylanase.

Allowable Subject Matter

Claims 11-16, 20, 27, 29, 40-41, 43-44 are allowed.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: The applicant has claimed A modified xylanase comprising a polypeptide having an amino acid sequence as set forth in SEQ ID NO: 1, comprising amino acid substitutions at positions 2, 28, 58, and +191, further comprising at least one other substituted amino acid residue at a position selected from the group consisting of: 5, 7, 10, 11, 16, 19, 22, 26, 29, 30, 34, 36, 38, 57, 61, 63, 65, 67, 92, 93, 97, 105, 108, 110, 111, 113, 132, 143, 144, 147, 149, 151, 153, 157, 160, 162, 165, 169, 180, 184, 186, 188, and 190, wherein the position of the substituted amino acid is numbered from the amino acid after the signal and pro sequence, wherein said modified xylanase has at least 90% sequence identity to SEQ ID NO:1 and has xylanase activity. In view of Applicants' claim amendments, all prior rejections are withdrawn. The prior art does not teach a modified xylanase having mutations at said positions and having xylanase activity. A standard search did not produce any prior art that suggests or teaches the claimed invention. The claimed invention is novel and nonobvious over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

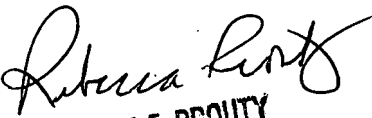
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Iqbal Chowdhury, Ph.D. whose telephone number is (571) 272-8137. The examiner can normally be reached on Monday-Friday from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can be reached at (571) 272-0928.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Iqbal Chowdhury, PhD, Patent Examiner
Art Unit 1652 (Recombinant Enzymes)
US Patent and Trademark Office
Rm. REM 2B69, Mail Box. 2C70
Ph. (571)-272-8137, Fax. (571)-273-8137
IC


REBECCA E. PROUTY
PRIMARY EXAMINER
GROUP 1652
1652